UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,881	01/23/2004	Raymond R. Kiddy	04860.P2611C	6014

7590 03/27/2007 James C. Scheller, Jr. BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP Seventh Floor 12400 Wilshire Boulevard Los Angeles, CA 90025-1026	**EXAMINER** KLIMACH, PAULA W

ART UNIT	PAPER NUMBER
2135	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

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<td rowspan="2">Office Action Summary</td>
<td>Application No.
10/763,881</td>
<td>Applicant(s)
KIDDY, RAYMOND R.</td>
<td></td>
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<tr>
<td>Examiner
Paula W. Klimach</td>
<td>Art Unit
2135</td>
<td></td>
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</table>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *12/26/06*.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *48-96* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *48-96* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This office action is in response to amendment filed on 12/26/06. The amendment filed on 12/26/06 have been entered and made of record. Therefore, presently pending claims are 44-70.

Response to Arguments

The applicant argued that Aucsmith and Hanna do not teach the limitations of storing an obfuscate stream including a second part of an operative instruction stream interleaved between a first part and a third part of another operative instruction streams to execute the second part when the first part and the third part are executed. This is not found persuasive. In the combination of Aucsmith and Hanna, Hanna discloses a system wherein the result of interleaving the digital data is saved to memory (abstract in combination with column 5 lines 55-60). Therefore the obfuscated stream is stored including a second part of an operative instruction stream interleaved between a first part and a third part of another operative instruction.

The applicant argued that Hannah is interleaving data instead of instruction streams. However, instruction streams are a form of digital data. Therefore in the combination of Aucsmith and Hanna where Aucsmith discloses the subprograms which correspond to the parts having been taken from at least two operative instruction streams. Hannah discloses the method of interleaving the digital data wherein in the combination the digital data is the subprograms of Aucsmith.

Further the claims do not recite a first part and a third part <u>of another</u> (emphasis added)

operative instructive stream. The claims recite a second part of the second operative instruction

stream is interleaved between a first part and a third part of the first operative instruction stream.

The system of Hanna teaches the rebuilding of the interleaved digital data during use

deinterleaving (abstract).

The teaching or suggestion to make the claimed combination and the reasonable expectation of

success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck,*

947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143 - § 2143.03 for decisions

pertinent to each of these criteria. In this case, in the transmission of data and security sensitive

programs belong to the same art because the transmission of data requires security just as, in the

modern age, security sensitive programs require transmission.

In response to applicant's argument that there is no suggestion to combine the references,

the examiner recognizes that obviousness can only be established by combining or modifying the

teachings of the prior art to produce the claimed invention where there is some teaching,

suggestion, or motivation to do so found either in the references themselves or in the knowledge

generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir.

1992). In this case, combining Aucsmith and Hanna with Cosoroaba would provide significant

system performance improvements (Conclusion, Cosoroaba).

In response to applicant's argument that there is no suggestion to combine the references,

the examiner recognizes that obviousness can only be established by combining or modifying the

teachings of the prior art to produce the claimed invention where there is some teaching,

suggestion, or motivation to do so found either in the references themselves or in the knowledge

generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir.

1992). In this case combining Aucsmith and Hanna with Low distributed networks assist people

to share information at a global scale.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 48-56, 58, 60, and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Aucsmith et al. (5,892,899) in view of Hanna (5,978,883).

In reference to claims 48 and 55 Aucsmith discloses a system comprises means for

storing an obfuscated stream (column 5 lines 47-52); means for executing the obfuscated stream

(column 8 lines 40-51); and wherein when the first part and third part are executed, the second

part (the following subprogram) is also executed (column 8 lines 27-39 and column 8 lines 51-

58).

Although Aucsmith discloses dividing the program into obfuscated subprograms and

interleaving the subprograms with unrelated tasks, Aucsmith does not discloses the obfuscated

stream comprising parts which are interleaved, the parts having been taken from at least two

operative instruction streams; including a first operative instruction stream and a second instruction stream wherein a second part of a second one of the at least two operative instruction streams is interleaved between two first parts of a first one of the at least two operative instruction streams; and wherein when the two first parts are executed, the second part is also executed.

Hanna discloses a process for interleaving blocks of packets comprising parts which are interleaved, the parts having been taken from at least two groups of data (column 4 lines 50-59); and wherein a second part of the second group of data (operative instruction streams) is interleaved between a first part and a third part of the first group (operative instruction streams) (column 4 lines 50-59).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to interleave the subprograms as taught by Hanna in the system of Aucsmith. One of ordinary skill in the art would have been motivated to do this because the sensitive program is made tamper proof by distributing the secret in space and time (column 1 lines 35-40).

In reference to claims 49 and 56 Aucsmith discloses a system wherein the second part is stack balanced (column 2 lines 37-54). Aucsmith discloses a method of stack (block) balancing by maintaining a minimum value for Delta.

In reference to claims 50 and 58 Aucsmith discloses a system wherein the obfuscated stream further comprises an obfuscation code that interrelates the parts from the operative instruction streams (Fig 2. part 104).

In reference to claims 51 and 60 Aucsmith discloses a system wherein at least one of the parts has been transformed before the parts are interleaved and after the parts are taken from the operative instruction streams (part 207 Fig. 5).

In reference to claims 52 and 62 Aucsmith discloses a system wherein at least one of the parts has been so transformed before the parts are interleaved and after the parts are taken from the operative instruction streams that the obfuscated stream performs at least the same logical operations of one of the operative instruction streams (Fig. 6).

In reference to claim 53 Aucsmith discloses a system wherein one of the operative instruction streams has been transformed before the parts are taken from the operative instruction streams (column 4 lines 52-62). The entry SubProgram is initialized (transformed) before performing partitions.

In reference to claims 54 and 54 Aucsmith discloses a system wherein two of the operative instructions streams are the same (column 5 lines 7-16).

Claims 57, 59, 61, 64, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aucsmith in view of Hanna as applied to claims 55, 58, 60, 63, and 65 above, and further in view of the article by Cosoroaba ("Synchronous DRAM Evolutionary Changes Bring Cost/Performance Advantages in Memory Systems").

In reference to claims 57, 59, 61, 64, and 66 a system wherein the memory comprises DRAM (Dynamic Random Access Memory) and wherein the obfuscated stream is stored temporarily in the DRAM.

Aucsmith discloses a system that utilizes ROM and a main memory (part 704 Fig 19) for storing the obfuscated stream, but Aucsmith does not disclose the use of DRAM.

Cosoroaba discloses the use of synchronous DRAM for main memory (Introduction).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use SDRAM that is disclosed by Cosoroaba in the system of Aucsmith. One of ordinary skill in the art would have been motivated to do this because it would provide significant system performance improvements (Conclusion, Cosoroaba).

Claims 67-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aucsmith in view of Hanna and in further view of Low et al.

In reference to claims 67, 74, 83, and 90 Aucsmith discloses a system comprises means for storing an obfuscated stream (column 5 lines 47-52); means for executing the obfuscated stream (column 8 lines 40-51); and wherein when the two first parts are executed, the second part (the following subprogram) is also executed (column 8 lines 27-39 and column 8 lines 51-58).

Although Aucsmith discloses dividing the program into obfuscated subprograms and interleaving the subprograms with unrelated tasks, Aucsmith does not discloses the obfuscated stream comprising parts which are interleaved, the parts having been taken from at least two operative instruction streams; including a first operative instruction stream and a second instruction stream wherein a second part of a second one of the at least two operative instruction streams is interleaved between two first parts of a first one of the at least two operative instruction streams; and wherein when the two first parts are executed, the second part is also executed.

Hanna discloses stream comprising parts which are interleaved, the parts having been taken from at least two operative instruction streams (column 4 lines 50-59); and wherein a second part of a second one of the at least two operative instruction streams is interleaved between two first parts of a first one of the at least two operative instruction streams (column 4 lines 50-59).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to interleave the subprograms as taught by Hanna in the system of Aucsmith. One of ordinary skill in the art would have been motivated to do this because the sensitive program is made tamper proof by distributing the secret in space and time (column 1 lines 35-40).

However neither Aucsmith nor Hanna discloses a system wherein the obfuscated stream is executed on the client.

Low discloses a client server system wherein the protect code (obfuscated stream) is executed on the client (2.6 Low).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to execute the obfuscated stream on the client as taught by Low in the system of Aucsmith. One of ordinary skill in the art would have been motivated to do this because server side execution suffers from network bandwidth and latency limitations (2.6 Low).

In reference to claims 68, 75, 84, 91 Aucsmith discloses a system wherein the second part is stack balanced (column 2 lines 37-54). Aucsmith discloses a method of stack (block) balancing by maintaining a minimum value for Delta.

In reference to claims 69, 76, 85, 92 Aucsmith discloses a system wherein the obfuscated stream further comprises an obfuscation code that interrelates the parts from the operative instruction streams (Fig 2. part 104).

In reference to claims 70, 77, 86, 93 Aucsmith discloses a system wherein at least one of the parts has been transformed before the parts are interleaved and after the parts are taken from the operative instruction streams (part 207 Fig. 5).

In reference to claims 71, 78, 87, 94 Aucsmith discloses a system wherein at least one of the parts has been so transformed before the parts are interleaved and after the parts are taken from the operative instruction streams that the obfuscated stream performs at least the same logical operations of one of the operative instruction streams (Fig. 6).

In reference to claims 72, 79, 88, 95 Aucsmith discloses a system wherein one of the operative instruction streams has been transformed before the parts are taken from the operative instruction streams (column 4 lines 52-62). The entry SubProgram is initialized (transformed) before performing partitions.

In reference to claims 73, 80, 89, 96 Aucsmith discloses a system wherein two of the operative instructions streams are the same (column 5 lines 7-16).

In reference to claim 81 Aucsmith does not disclose a system wherein the communication device comprises a network interface.

Low discloses client server communications that implicitly require network interface (section 2.2).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to communicate over the network as taught by Low using the system of Aucsmith.

One of ordinary skill in the art would have been motivated to do this because distributed networks assist people to share information at a global scale.

In reference to claim 82 Aucsmith does not disclose a system wherein the network interface comprises an Ethernet interface.

Low discloses client server communications that implicitly require network interface (section 2.2), wherein Ethernet is a common example.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to communicate over the network using an Ethernet interface as taught by Low using the system of Aucsmith. One of ordinary skill in the art would have been motivated to do this because distributed networks assist people to share information at a global scale.

In reference to claim 94, wherein at least one of the parts has been so transformed before the parts are interleaved and after the parts are taken from the operative instruction streams (Part 207 Fig. 5) that the obfuscated stream performs at least the same logical operations of one of the operative instruction streams (column 5 lines 7-16).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Paula W. Klimach whose telephone number is (571) 272-3854.

The examiner can normally be reached on Mon to Thr 9:30 a.m to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kim Vu can be reached on (571) 272-3859. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PWK
Monday, March 19, 2007

HOSUK SONG
PRIMARY EXAMINER